WHIRRAKEE

April 1996 Vol. 17 No. 3

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MONTHLY NEWSLETTER OF THE BENDIGO FIELD NATURALISTS CLUB

Bendigo Field Naturalists Club Inc.

Address for correspondence: PO Box 396, Bendigo 3550

Office Bearers for 1995 - 1996

President	Bill Holsworth	13 Nabilla Crs. Bendigo	43 4063
Senior Vice President	Jane Cleary	24 Goynes Rd. Epsom	48 4396
Junior Vice President	Chris Tzaros	20 Guys Hill Road, Strathfieldsaye	39 5544
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Assistant Secretary	Lyn Hamilton	3 Park Ave, Golden Square	47 8884
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Membership Officer	Bob Ruddick	Markevitch Lane, Bendigo	49 3287
Excursion/syllabus organiser	Warwick Bates	40 James Street, Bendigo	41 1980
Librarian	Jane Cleary	24 Goynes Rd. Epsom	48 4396
Whirrakee contact	Tom Burton	5 Naranghi Drive, Bendigo	42 5518

Membership of the Bendigo Field Naturalists Club is open to all those interested in Natural History. The subscription rates are: Single $30; Family $35; Concession: Single $25; Family $30. *Whirrakee* subscription only is $30.

General meetings are held on the second Wednesday of each month. The venue for General meetings is the Golden Square Senior Citizens Building, Old High Street, Golden Square. Meetings start at 7:30pm and conclude with supper. The Annual Meeting is held in September.

Committee meetings are held on the third Wednesday of each month. Members of the Committee are the Office Bearers listed above, together with the following members:
J Burtonclay; M Stone; P Howden; S Beattie; J Raven; R Moors.

Excursions The assembly point for excursions is the Golden Square Senior Citizens Building, unless otherwise specified. Full-day excursions normally commence at 10am (usually on a Sunday); half-day excursions normally commence at 2pm and may be either on a Saturday or Sunday. Full-day or half-day excursions are usually held on the weekend following the General Meeting. Campouts are held several times each year, usually coinciding with long weekends or holiday periods.

The Bendigo Field Naturalists Club has 2 active sub-groups:

Bird Observers Group: meets on the first Friday of the month, at 7:30pm. The venue for meetings is the Golden Square Senior Citizens Building.

President: Alf Howe
Secretary: Sally van Gent

Mammal Survey Group: meets on the fourth Wednesday of the month at 7:30pm in the Golden Square Senior Citizens Building.

Chairman: John Burtonclay, Fadersons Lane, Mandurang (39 5710)
Secretary: Bill Holsworth, 13 Nabilla Crs., Bendigo (43 4063)
Equipment Officer: Ian Fenselau
Vice Chairman: John Guley

Front Cover

Photographer: Ian Flecknoe-Brown

Witches Butter (or Yellow Brain Fungus), *Tremella* sp. from the state forest at Mandurang. It is deep yellow and feels rather interesting.

N.B. This photo was tightly stuck to my office door for over a year now and I had to take it off for screening and in the process nearly ruined it. I have, once again, almost completely run out of photos and readers are urged to send in suitable colour or black and white prints for publication. All photos are returned faithfully (and undamaged) (ed.).

WHIRRAKEE

Monthly Newsletter of the Bendigo Field Naturalist Club
Vol. 17, No. 3, April 1996

Whirrakee takes its name from the Whirrakee Wattle (*Acacia williamsonii*) which is virtually endemic to the Bendigo region

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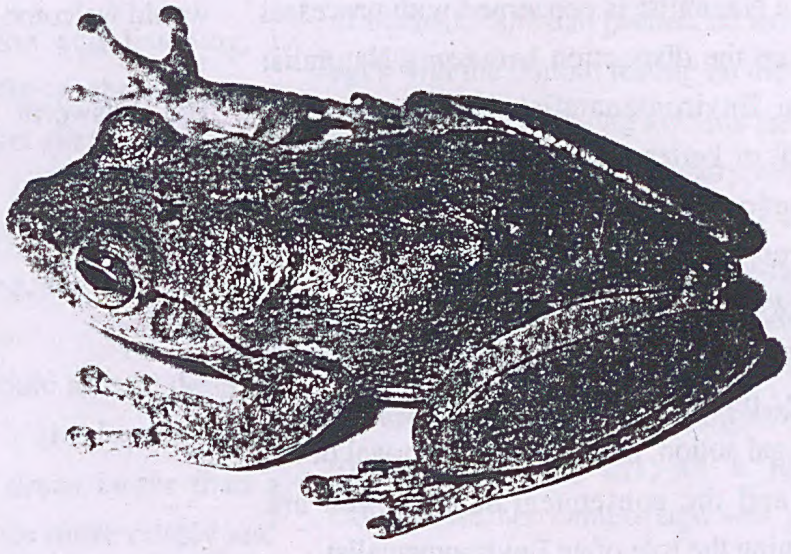
Authors are responsible for the accuracy of the information they use and also for any opinions expressed in their articles.
Contributions will be included as soon as possible after they are received, although articles received after the monthly General Meeting will probably be too late for inclusion in the next issue of *Whirrakee*.
Articles in *Whirrakee* may be reproduced, but permission should be obtained from the Bendigo Field Naturalists Club, and acknowledgment should be given to the author and the Club. Back issues are available on request (see article in *Whirrake* Vol.17, No.2)



Litoria peroni
Peron's Tree Frog
(see article on page 8)
from: Tyler 1977

Editor's note: The editors believe that since we have a President's column now, there is no need for a separate editor's comment.

PRESIDENT'S COLUMN

What does a Naturalist do?

We are surrounded by nature, some of it pleasant and some of it nasty and even dangerous. We are also surrounded by man-made products and situations, some of them beneficial and some not so. Let us describe a Naturalist as a person who is interested in the natural world and an Environmentalist as a person primarily interested in the effects of natural and man-made environments on man. The distinction may not please everyone but that can be the subject of another article.

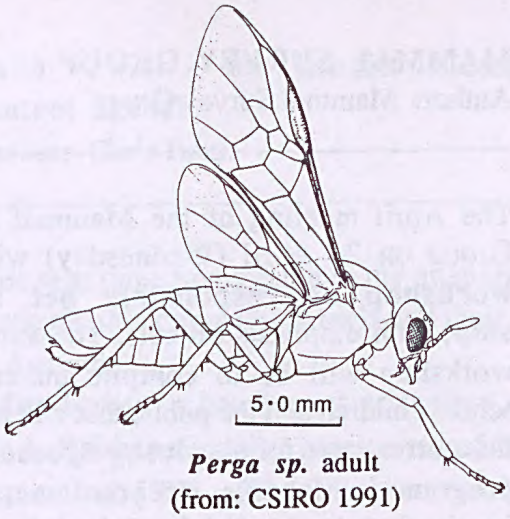
Being a Naturalist can be easy; it requires only an interest in nature. Being a good Naturalist requires more. It may involve detailed knowledge of all the orchid species on One Tree Hill, identification of the birds at Lake Neanger, or fossils, or insects, or mushrooms, or soil nematodes ... the list is endless. A knowledge of life histories of plants and animals - how they are pollinated, how seeds are dispersed, or the migration of plovers, the food habits of powerful owls, these too are part of a Naturalist's interest.

When a Naturalist is concerned with processes in nature the distinction between a Naturalist and an Environmentalist starts to become blurred, or better, merged. To understand the distribution of spiny rush on a meadow after the forest has been removed from the hill top allows you to be both an Environmentalist and a Naturalist. If you take action, such as fund raising, public speaking, working bees, or even legal action, to prevent the removal of the forest and the consequent salinity, you are performing the role of an Environmentalist.

Both functions are necessary and interrelated. If the Naturalists among us do not know where the rare birds nest, or what the detailed water habitat requirements of a native galaxias are, the Environmentalist role cannot be played. Conversely, if the Environmentalist role is not played to protect rare species, to prevent pollution or habitat destruction then the rare fauna and flora will be lost.

During the past year the roles of the Naturalist and Environmentalist were played by the Bendigo Bushland Appeal Committee. Lot 6, Bennetts Road has been secured as Nature Reserve by first identifying the natural history values of the area, and then doing the important public relations work to secure commitment from the City of Greater Bendigo, the local mining companies and the public. Without the coordination of all these activities by persons skilled in Natural History, Public Relations, Accounting, and Administration the ceremony held in Hargreaves Mall for the City to present a cheque to the Trust For Nature would not have happened, and we would not have a new nature reserve. Incidentally the Bendigo Field Naturalists Club will be given the opportunity of naming the new reserve and your Committee would welcome comment.

Bill Holsworth



Perga sp. adult
(from: CSIRO 1991)

Further Observations of the Saw Fly

Author: Tom Patullo

As I walked past a young eucalypt in my garden one day, something drew my attention to a large fly at rest on one of the leaves; I think what drew my attention mainly was the closeness I had passed without disturbing the fly.

On closer approach the fly still remained as I thought motionless, closer still, and indeed almost touching it, and still no movement. At this moment I became aware of a continuous, regular sound, quite faint but still audible. Not as if a back and forth movement was responsible, but rather steady and continuous, it puzzled me!

On continued observation and listening, I decided, yes - it was definite, the noise was being made by the fly, yet the fly was quite motionless.

I consulted Bob Allen. "A Saw Fly" said Bob, it would be worth watching, and so I continued to watch it for several days.

Perhaps at this stage I should try and describe the fly as I remember it. In size I would say it would be two or three times larger than a March Fly with its outlines more crisply and sharply defined, with transparent wings extending back well beyond its body, filled with a filigree type design.

Continued watching brought me no nearer to a conclusion as to what the fly was doing or how it was making this continuous faint rasping noise, until one day the fly was absent.

On examination of the leaf I found that on the part where the fly had been, the leaf had a definitely shiny appearance and I thought I could detect a thin tissue paper appearance on the side of the leaf on which the fly had been operating. Later observations proved that I had been somewhere near the mark.

The following observations were quite fascinating as the fly settled down for an egg laying session. She settled down in a slightly different position from what she had previously; and as I watched, her ovipositor protruded from under her body with a white egg positioned in the end. She proceeded to position the egg in the lower corner of the purse-like cavity that she had made in the leaf, in a position that was roughly parallel with the secondary vein of the leaf. In like manner she proceeded to place the second egg in a similar position, likewise the third, then the fourth, until she reached the end of the purse-like cavity. The eggs were definitely in a cavity between the sides of the leaf, not on the outside of the leaf. She had proceeded to lay a row of eggs with the bottom resting on the central vein of the leaf and radiating towards the edge of the leaf, parallel with the secondary veins.

I tired of watching. On the next visit I found that she had completed her egg-laying, filled her purse as it were, and sealed it quite invisibly to the casual glance. What had been white new laid eggs, had changed on exposure to the light I guess, to a leaf colour. Colourwise her camouflage was perfect, but when I held the leaf edgeways to the light, the bulge was quite discernible. Likewise when I ran my fingers lightly over the position, the

swelling was noticeable. The conclusion I arrived at was the following:

The fly, in some way, had worn one side of the leaf to tissue paper thinness, then cut across the top so she had a purse-like cavity into which she stacked her eggs in an orderly row, then sealed the top making sure of an ant-proof seal. Her job finished, she disappeared.

However, my observations had not finished.

Some time later I have not kept a record after irregular observations I detected "movement at the station". Tiny little black grubs were breaking out of the purse. These grubs were advancing on an ever widening (be it ever so slow) circle, eating as they went the tissue paper covering. Double whammy there - small mouths, soft leaf. They were growing rapidly, and as they went, they got to the tougher leaves, already congregating in clumps as adult larvae do.

As I was concerned for my young eucalypt, just about this time a clump of young Saw Fly larvae died under my boot.

Another observation, another situation, same subject

Walking round the garden one day I noticed a peculiar appearance of soil at the foot of a tree. Having the hoe in my hand I raked at the peculiar patch of soil. Yes, you guessed it, a clump of Saw Fly larvae just under the surface.

larva of ***Perga* sp.**
from: CSIRO 1991

Reference:
CSIRO 1991
The Insects of Australia, 2nd edition, Volume 2
Melbourne University Press

MAMMAL SURVEY GROUP

Author: Mammal Survey Group

The April meeting of the Mammal Survey Group on 24 April (Wednesday) will be a **workshop on responsible pet ownership**, with emphasis on cats. The aim of the workshop will be to compile material for school children and the public that will augment the current pet food industry sponsored cat program in schools. If you want to be involved, or have special knowledge or ideas, please come and help.

The **mammal nest boxes** at Spring Gully Reservoir will be checked on Thursday 25 April 1996 (Anzac Day) starting from the Shakespeare Road Gate at 10am. It is essential to be on time because the gate will be locked behind us. Bring lunch if you wish to stay for the full day (until about 3pm). Otherwise you can leave about noon. Rob Watkins and John Burtonclay have built 6 new boxes to replace vandalized boxes in Spring Gully Reservoir and these will be installed where needed.
Phone Bill Holsworth (434 063) if you wish to join this Mammal Survey Group activity.

The **Australasian Bat Conference** will be held at Naracoorte, 9 - 12 April 1996. Bill Holsworth will be attending and others are invited to consider travelling with him.

The Mammal Survey Group will host a **BFN Club excursion to Wombat State Forest** on Friday 19th April 1996 to view Greater Gliders. We will meet at the picnic area on Bunding-Blakeville Road. The picnic area about 1 km from the main highway, about 20 km south of Daylesford. or to be more exact, about 4 km south of the Spargo Pub. If you can arrive early there will be time for you to have a picnic dinner. We will search for gliders from 8:30 to 9:30 with spotlights. Some groups may wish to stay later and explore nearby areas. For information about the Greater Glider read the article in the July 1995 Whirrakee. Phone Bill Holsworth (434 063) if you wish to join this Mammal Survey Group activity.

Barn Owls - an inbuilt biological control agent?

Author: Chris Bunn

Last year three items came to my attention that made me think about barn owls and their status in Australia.

"Mice *beaten*" a heading stated in the Courier Mail, Brisbane's daily newspaper of the 14 September 1995. The Minister for Lands confirmed that the baiting of mice, covering 250,000 hectares, had been a huge success. Only four bird deaths could be attributed to the strychnine used to kill the mice.

Next I saw an article in the June issue of *Ceres*, published by the Food and Agriculture Organisation of the United Nations highlighting "Barn owl biocontrol: a 100% natural rat-trap". The article described the heavy losses caused by rodents in oil-palm plantations on the Malaysian peninsula.

Overnight, it seemed, a local population of barn owls, that had been present in the plantations for as long as anyone could remember, had become much more efficient as rodent hunters.

The only additional and supportive element researchers had provided was the provision of artificial nesting sites for the owls. The birds were happy to occupy the artificial nest boxes. In one oil-palm estate the occupancy rate soared to more than 80%, and the increase in bird numbers soon made an impact on rat numbers. In another study 200 boxes placed in a 1000 hectare plantation had a 95% occupancy rate by barn owls only twenty months later.

Then, I stumbled upon David Hollands' article "Silent Hunters of the Night" in the spring issue of *Nature Australia*. He discusses the five Tyto species of owl that occurs in Australia. Barn owls like the other Tyto species are supreme night hunters and capable of hunting in total darkness. Barn owls have thrived in Australia where they take advantage of the periodic rodent plagues that are such a feature of Australian life. Before European settlement the Long-haired rat was the species most commonly involved. (This species of rodent is currently increasing in numbers in the Ord irrigation area and scientists consider a plague is imminent.) As has occurred elsewhere in the world the Barn owl is doomed without a supply of rodents. An early name for them in Australia was the Delicate Owl, because when their food supply ran out, they frequently found public places to die.

As predators, owls are at the top of the food chain, and David Hollands stresses that a thorough knowledge of owls is necessary for a better understanding of our environmental health. Unfortunately unlike some other countries, Australia's knowledge about the status of its owls is very poor.

Stimulated by the thought that may be we underutilise our barn owl as a biological control agent, I looked for some more information. In the National Library I stumbled upon a recently published book about a study of barn owls undertaken in Scotland (Iain Taylor-Barn Owls 1994). Some of the interesting conclusions arrived at by Taylor were:

- Adult owls are totally faithful to their nest sites. They stay because suitable barn owl nest sites are usually difficult to find. Because of their size and the usually large number of eggs laid in a clutch, they require a cavity size of at least 0.3m^2.
- Hunting ranges between birds can overlap, but not nest sites.
- Fifty-five per cent of the adult population die of starvation.
- Breeding is likely to be controlled directly by food supply
    - birds quickly mature (the quickest in Scotland was 4 months);
    - small eggs are laid asynchronously; and
    - they can breed up to 8 months of the year and produce 10-12 young per year.

At least some of these characteristics are apparent in the race of barn owl that lives in Australia. Pizzey and others describe how in southern Australia, especially in colder months many are found dead, apparently undamaged, probably from starvation. David Fleay in his famous book *Nightwatchman of Bush and Plain* describes how a pair of barn owls, situated in a suitable aviary with nesting hollow and good food nested over a whole year, producing eight consecutive clutches of 5-7 eggs. Fleay also describes when he was camping in the Stony Rises country near Smeaton, Victoria, that with plentiful food and numerous hollow gums there were families of owls all over the place, nesting in almost every suitable tree hollow.

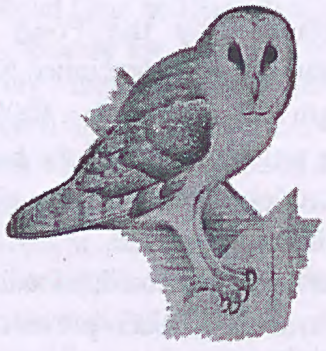
One characteristic is contentious - how nomadic is the adult barn owl? Taylor contends that in Europe the barn owl is sedentary. In evolutionary terms it is more profitable to keep the family home and lose some offspring through starvation than to be nomadic, but probably lose your nesting site. In Australia barn owl populations fluctuate widely in response to rodent plagues (Readers Digest). For example, the last irruption of barn owls in Canberra occurred in 1984, but at other times they are rarely recorded (McComas Taylor).

Taylor suggests that rehabilitation of barn owls should occur by progressively expanding breeding opportunities from where known breeding birds exist.

More needs to be known about barn owls (and other owl species) than currently would appear to be the case in Australia. Although assisting barn owl populations will not stop mouse plagues, it only seems sensible to encourage these birds in any way we can as endemic biological control agents; especially, if the use of poisons such as strychnine can at least be reduced. Country people should be encouraged to provide artificial nesting sites so these birds can live up to their name.

References

- Fleay David, Nightwatchmen of Bush and Plain (1968)
- Hollands David, Silent Hunters of the Night, Nature Australia pp39-45 (Spring 1995)
- Pizzey Graham, A Field Guide to the Birds of Australia (1980)
- Readers Digest Complete Book of Australian Birds p304 (1976)
- Taylor Iain, Barn Owls: predator-prey relationships and conservation (1994)
- Taylor McComas, Birds of the Australian Capital Territory - an atlas. (1992)



When is a Tree-frog not a Tree-frog?
Author: Tom Burton

When I started out as a naturalist in the early '60s the known frog fauna of Australia was far smaller and simpler than it has become since. For one thing, many new species were discovered, some of them because of improved access to difficult places, such as the Mitchell Plateau of northern West Australia; some because of improved techniques of recognition, such as the Victorian Frog *Litoria paraewingi*, which was thought to be just a population of the Ewing's Tree-frog *L.ewingi*, until its mating call was found to be distinctive; some surprising and spectacular, such as the Gastric Brooding Frogs of Queensland, which appeared suddenly in well searched places, then disappeared just as suddenly.

A second change since the early '60s has been our improved understanding of the relationships of the frog species, which has led to a certain amount of re-classification. In no group has this been more apparent than in the Tree-frog family, the Hylidae.

How can you recognise a hylid Tree-frog? Well, in general the presence of flattened discs on the tips of the fingers and toes is good enough in this part of Australia. Around Bendigo we have two species, Ewing's Tree-frog and Peron's Tree-frog. However, some Tree-frogs lack these discs, which can make identification tricky, and you have to look at the skeleton to be sure. The skeletons of all hylid Tree-frogs have one feature in common - the bone of each finger tip and toe tip is narrow and curved downwards. The Tree-frogs which lack discs usually live on the ground or in water, rather than in trees.

Hylid Tree-frogs are to be found throughout North and South America, Europe and Australia-New Guinea. The biggest group of hylids are placed in the genus *Hyla*, and this genus held all of the Australian Tree-frogs, as it was assumed that the Australian Tree-frogs were very closely related to the Tree-frogs of other continents.

This view changed in 1971, when Mike Tyler at the University of Adelaide began looking at the muscles of the various frog families, and he found that the throat muscles of all of the Australian Tree-frogs differed from those of all other Tree-frogs, and so all of our frogs that had been called *Hyla* were thenceforth removed and placed in a new genus called *Litoria*.

So far so good, but the peculiar throat muscles were found not only in climbing Tree-frogs, but also in the ground and water dwellers, and also in a group of frogs that nobody had thought related at all to Tree-frogs: the water-holding frogs (genus *Cyclorana*) that burrow in Australia's north, which had up until the late '70s been placed in a completely different family.

Nobody had thought that these water-holding frogs were much like the Tree-frogs until this discovery was made, but once people started looking, a striking similarity between the water-holding frogs and the aquatic Tree-frogs, such as the Golden Bell-frog, was apparent. In fact, it is now not quite clear what anatomical features can be used to distinguish *Cyclorana* from *Litoria*, as these burrowing frogs also possess hooked final finger and toe bones.

All *Litoria* species have a cartilage between the last two bones of each finger. This gives the fingers of all *Litoria* a kink. Originally it was thought that no *Cyclorana* species had this cartilage, but when x-rays were taken in the mid-'70s, two species of *Cyclorana*, the Striped Burrowing Frog *C. alboguttata* and Dahl's Aquatic Frog *C. dahlii* were found to have the cartilages. These two species were then put into *Litoria*, and that is where you will find them in the latest frog book by Barker, Grigg and Tyler.

The Striped Burrowing Frog proved to be a problem. When the blood proteins of these frogs were examined, the Striped Burrowing Frog was shown to be very closely related to the *Cyclorana* species and not at all to other *Litoria*. Thus the possession of finger cartilages was not a fool-proof indicator of *Litoria.*

Over the last year or so I have been examining the hand muscles of climbing frogs. I have been trying to work out which features of the muscles were the results of adaptation to the climbing way of life, and which had been inherited from distant ancestors and hence useful indicators of their evolutionary history.

A few months ago I thought that I had found the anatomical feature to tell the genera apart. In most frog species the main muscle of the palm side of the wrist ends with tendons which help bend fingers three, four and five. [The first finger of a frog is very small, and just looks like a lump on the second finger.] In *Litoria* species the wrist muscle is divided so that the main tendons of fingers four and five are quite separate. In *Cyclorana*, however, the tendons of fingers four and five are joined at the base.

This feature worked very well for a while. The Striped Burrowing Frog has the wrist muscles of a *Cyclorana*, and this gives support to the large group of herpetologists who want to forget about the finger cartilages and put it back into *Cyclorana* .... but of course something had to go wrong: Dahl's Aquatic Frog, which everybody acknowledges as a good *Litoria* species has the tendons joined as in *Cyclorana.*

If I had my way (which I shan't), the problem could all be solved by just dumping the genus *Cyclorana* and calling all of these frogs *Litoria*, or at least dividing the genera differently.

The use of blood proteins to classify frogs is controversial, and certainly some of the results of this work are plain silly. You could feel the embarrassment of the authors when they claimed that the giant White-lipped Tree-frog *Litoria infrafrenata* was not related closely to any other Australian Tree-frog, despite masses of evidence to the contrary. However, I think the use of blood proteins has uncovered the solution to one mystery.

In New Guinea there is a group of *Litoria* species that are quite different from all other *Litoria.* These are classical Tree-frogs, with cartilages in the fingers, divided wrist muscles and discs, but they have a number of skeletal differences. Information from the blood proteins showed, surprisingly, that these species are most closely related to a strange group of Australian frogs. This group consists of some ground dwelling frogs, including the Rocket Frogs, and a few climbing frogs. I call this group the Rocket Frog group.

To my astonishment, when I looked at the wrist and hand muscles, I found that most of the members of this Rocket Frog group as identified by the proteins possessed a peculiarity not found in any other of the world's Tree-frogs, except the peculiar New Guinea Tree-frogs. It seems to me that the blood proteins have gotten this story right.

Notably, our two Tree-frogs, the Brown and Peron's, are very closely related to each other. This was suggested by the blood protein data and confirmed by the hand muscles.

I can hear people who have read this article right through saying, "So what?" Well, for one thing, please be tolerant of taxonomic changes. Biologists don't make these changes for fun or fame, but to make the classification more logical and informative, and hence more durable.

Lastly, as I look back on what I have written, I see that it is a very strange article for a field naturalists' magazine. All that I have written

about has been the work of scientists working in laboratories, mostly using long-dead frogs borrowed from museums. Some of you probably think that this sort of research is boring. On the contrary, it is the most exciting detective work imaginable. I have the fun of inventing theories all of the time, but those theories are always in jeopardy. Every specimen I look at may be the one to blow my latest, most cherished theory out of the water, and I feel as much tension and excitement when my precious ideas are tested as anyone would at a close football or cricket match.

Every time we find out something new about the relationships of the frogs we see in the field, we feel richer, and the more we find out about the magnificent animals we are privileged to work with, the more we appreciate them, thus the keener we are that they be conserved.

Litoria ewingi, Brown Tree Frog
The kink in the fingers, a characteristic of the genus, can be seen in this picture.
(From: Tyler 1977)

References

- Barker, J., Grigg, G.C. & Tyler, M.J. (1995). A Field Guide to Australian Frogs 1995 edition. Sydney: Surrey, Beatty & Sons.
- Tyler, M.J. (1977). Frogs of Southern Australia. South Australian Museum.

Rare butterfly in Eaglehawk garden

Author: Ray Wallace

During the last week of February 1996 and the first week of March my garden has been frequented by a Dark Purple Azure *Ogyris abrota* a rare butterfly for this district.
In Common and Waterhouse's 'Butterflies of Australia' its distribution is shown as a narrow strip on the coast extending a few miles inland.
I first noticed the butterfly flying swiftly from a clump of Box Mistletoe growing in a medium-sized Yellow Gum and took little more than superficial notice, as I thought with its brown and black colouring and bold yellow splash on the forewing it was an Australian Admiral *Vanessa itea*, a common butterfly in these parts.
However, a couple of days later my interest was aroused when the "admiral" flew swiftly out again and did two very fast and wide loops before settling near the mistletoe again. Why would an "admiral" be continually near mistletoe? It is well known that their larvae's food plant around here is stinging nettle, the common garden weed, another argument against gardens which are too tidy.
Anyway, my puzzlement caused me to net the butterfly in question, and upon examination it proved to be a lovely undamaged specimen of a female Dark Purple Azure.
She was very similar to an Admiral, although in the hand their underwing pattern is quite different. However this is extremely difficult to pick up in flight, as I found this specimen was a very fast flyer indeed. As I'm not a collector, when I had identified her I let her go.
The male, which is dark purple on the upper wing edged widely with black, was nowhere to be seen. The female is dramatically different with her brown, black and yellow upper colouring.
The larvae feed on various mistletoe species including the genera *Dendropthoe* and *Muellerina*. The genus of Box Mistletoe *Amyema* is not mentioned as a food plant, but it seems most likely that the larvae could adapt, as they have been found feeding on introduced ornamentals in Melbourne.
The Azures belong to the Lycaenidae family better known as Blues.
On a pleasant autumn day in April 1994, warm and overcast, Trevor Bish and myself had the pleasure of observing the Silky Azure *Ogyris oroetes apiculata*, a beautiful butterfly, hilltopping at Pyramid Hill.

Koorie Plants Koorie People
Traditional Aboriginal Food, Fibre and Healing Plants of Victoria
by Nelly Zola and Beth Gott
reviewed by Warwick Bates

Koorie Plants Koorie People is a must for anyone with an interest in the human history of Victoria. This publication by Nelly Zola and Beth Gott deals with how many indigenous plants were woven into the fabric of Koorie life. It is not simply a book describing a list of useful, edible, medicinal and fibre plants but it impresses the reader with the view that the Koories were great horticulturists, nutritionists and farmers.

In fact, by all accounts they had a far more holistic lifestyle, and manageable economy, in terms of the wellbeing of the population at large, than is evident in many contemporary Western civilizations.

The book was written in consultation with elder members of the Victorian Koorie community and this lends authority to the examples quoted. A list of various Koorie names for many of the plants is also interesting.

The enormity and swiftness of the impact of early white settlement on the Koorie people is well illustrated through the examples of Murnong. Murnong (or Yam Daisy, *Microseris lanceolata*) was, before white settlement, superabundant on the open and semi-open country, kept that way by a fire regime controlled by the Koories. The harvesting methods were done in a way to encourage the proliferation of the plant, which was a highly nutritious and staple food, easily dug up and available all year round. Sheep exterminated it rapidly from most areas.

The very readable handbook is published by the Koorie Heritage Trust and is amply illustrated by well chosen colour plates.

KOORIE PLANTS KOORIE PEOPLE

Traditional Aboriginal Food,
Fibre and Healing Plants of Victoria

Nelly Zola and Beth Gott

From the Mailbag
Author: Elaine Mathison

Each month the Club receives a number of newsletters and magazines: some by subscription and some in exchange for *Whirrakee*. These are available from the Club librarian at our meetings.

NATURE AUSTRALIA
Summer 1995-96

'A Redback Affair' by Steve Van Dyck suggests that the notorious Redback Spider may not be endemic to Australia, possibly being introduced after European settlement. The appearance and behaviour of both sexes are described.

'Like Mother, Like Daughter' by Danielle Clode deals with the mating and mothering behaviour of the Brown Antechinus. A long term study of female antechinus reproduction revealed that about 90% lost young between birth and weaning. Possible reasons for this are given.

'Red Goshawk' by Stephen Debus describes Australia's rarest and most threatened raptor. A study has revealed important details about the species' biology and environmental needs, leading to an appropriate action plan to ensure its survival.

'Killer Rats of the Queensland Rainforest' by William F. Laurance reports on an ongoing study of the ecology, behaviour and conservation of Bush Rats in northern Queensland rainforests. These nocturnal mammals are a vital part of the normal functioning of the forest, eating seeds, insects and fungi, and providing some problems as well for rural residents.

'Dingoes: Expatriate Wolves or Native Dogs?' by Laurie Corbett points out that many of the myths concerning dingoes have now been dispelled by research undertaken during recent years. The origin and evolution of the species, how it came to Australia, and its role in our ecology are outlined.

HABITAT (ACF)
Vol. 23 No. 6 December 1995

'Survival in a Shrinking World' by Bettina Hess and Stephen Mallick points out that habitat fragmentation threatens many species of our wildlife and describes how one small marsupial is surviving in Tasmania with the support of weeds.

'The Golf Bogey' by Penny Figgis and Sebastian Wrench details the severe environmental impact in many countries caused by golf course development. This can be minimised by proper siting, design and management.

'The Next Wave: marine protection beyond The Reef' by Tim Allen and Tim O'Hara examines current ideas for the improved management of other marine zones in Australia than the Great Barrier Reef.

THE VICTORIAN NATURALIST(FNCV)
Volume 112(6) 1995 December

- Foraminiferans from Lake Connewarre, Victoria: eleven species of these one-celled animals recorded.

- The Cryptogams of Royal Park, Melbourne: survey of mosses, liverworts and lichens in an inner urban reserve.

- European Management of Remnant Grassy Forests and Woodlands in South-eastern Australia.

- a Trip to the Victorian Alps (1899 & 1995): Mts Buffalo and Hotham revisited.

- White-winged Choughs and Bird Behaviour.

- Northern Pacific Seastar.

Also received recently:

*Code of Practice for Fire Management on Public Land (DCNR) December 1995

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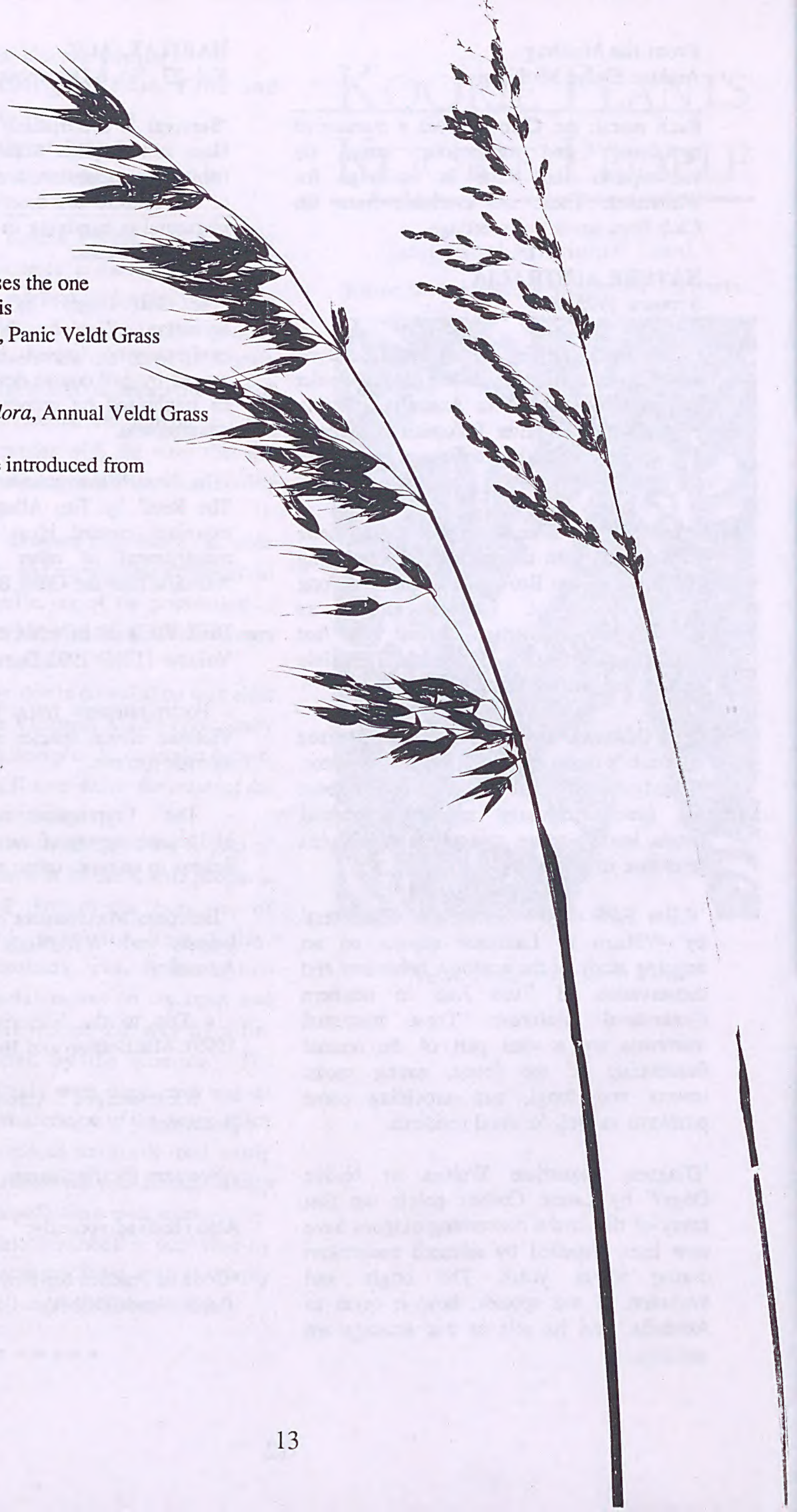

of the two grasses the one
on the far right is
Ehrharta erecta, Panic Veldt Grass

the other is
Ehrharta longiflora, Annual Veldt Grass

both species are introduced from
South Africa.

Diary

The General, Bird Observers Group and Mammal Survey Group meetings are held at the Golden Square Senior Citizens Building, Old High Street, Golden Square, unless otherwise indicated.

General Meeting

April 10, 7:30pm
Jane Cleary will talk about biblical plants.

May 8, 7:30pm
Ian Fenselau will talk about honey bees and conservation,

June 5, 7:30pm
An extraordinary meeting will be held to celebrate World Environment Day.
Speaker: Alan Reid (Gould League Victoria)
The topic will be birds.
This will be a public meeting.
Details need to be confirmed; please check this column in the next *Whirrakee*.

June 12, 7:30pm
Speaker to be determined.

July 10, 7:30pm
Graeme Pizzey will talk about.....birds!
(to be confirmed)

August 14, 7:30pm
Greg Binns will talk about birds from overseas

September 11, 7:30pm. President's Address

October 9, 7:30pm
David Milsom will talk about greening Australia and green corridors.

Activity Night

The first of these informal evenings was held on March 6.
Other dates are April 3, May 1 and June 5.

Excursions

The assembly point for excursions is outside the Golden Square Senior Citizens Building, Old High Street, Golden Square, unless otherwise specified. Full-day excursions normally commence at 10am.
Please check details (or any changes) in the *Whirrakee* for the month of the excursion.

Sunday, April 14
A half-day excursion led by Jane Cleary to view some of the plants mentioned in her talk on April 10. Meet at 1pm at the Club Rooms or at 1.:30pm at Jane Cleary's house (address on inside front cover)

Friday 19th April
The Mammal Survey Group is inviting other interested members of the Club to an excursion to the Wombat State Forest to view Greater Gliders.
For meeting times and other details see article on page 5 of this issue.

Sunday, May 12
This half-day excursion will be related to the talk on May 8. Details to be arranged.

Bird Observers Group

March 29, 7:30pm
Because the first Friday of April is Good Friday, the April Meeting was brought forward to 29 March.

May 3, 7:30pm
Speaker: Cynthia and Rob Watkins will present more bird highlights of their recent overseas trip
Bird of the Night: Western Warbler

June 7, 7:30pm
Speaker: Graham and Margaret Batey will talk about the birds of King Island
Bird of the Night: Mistletoe Bird

July 5, 7:30pm
Bird of the Night: Grey-crowned Babbler

August 2, 7:30pm
Bird of the Night: Hooded Robin

September 6, 7:30pm
Bird of the Night: Southern Whiteface

October 4, 7:30pm
Bird of the Night: Fuscous Honeyeater

November 1, 7:30pm
Bird of the Night: White-fronted Chat

December 6, 7:30pm
Bird of the Night: Willie Wagtail

Supper

The usual arrangements for supper are as follows: members either bring a plate or pay $1 for supper. This small amount is used by the treasurer to reimburse members who purchase essential supper supplies.